

WHAT IS CLAIMED:

1. A method of removing an object from a digital image comprising,
displaying a digital image derived from digital image data,
5 overlaying a virtual frame to surround a sub-region of the digital image that
contains at least a part of the object and a portion of the digital image that does not
comprise the object,
 identifying the defect or object to be removed by apportioning the virtual frame
into object and non-object regions,
10 modifying the digital data to amend data relating to object regions so that the data
more closely resembles data of non-object regions,
 the step of modifying the digital data including combining noise into the digital
data of the object.
- 15 2. The method of claim 1 wherein the digital image data is provided in a format that
describes a perceptual color space.
3. The method of claim 2 wherein the perceptual color space is selected from
perceptual color spaces having a lightness component.
- 20 4. The method of claim 2 wherein the perceptual color space is selected from the
group consisting of CIE L*u*v* and CIE L*a*b* color spaces.
5. The method of claim 2 wherein the object is a defect.
- 25 6. The method of claim 5 wherein the defect is digital data of a defect in an original
image.
7. The method of claim 1 wherein the noise is estimated from image data in the
30 vicinity of the object.

8. The method of claim 7 wherein the noise is estimated by a process comprising sampling image data from a non-object area.
- 5 9. The method of claim 3 wherein noise is estimated from image data in the vicinity of the object, and the noise is estimated by a process comprising sampling image data from a non-object area.
- 10 10. The method of claim 4 wherein noise is estimated from image data in the vicinity of the object, and the noise is estimated by a process comprising sampling image data from a non-object area.
11. The method of claim 9 wherein the perceptual color space is selected from the group consisting of the CIE $L^*a^*b^*$ color space and the CIE $L^*u^*v^*$ color space.
- 15 12. The method of claim 1 wherein object regions and non-object regions are designated by application of a threshold value for at least one component of the digital image data for a pixel.
- 20 13. The method of claim 1 wherein boundaries between object regions and non-object regions are determined by application of a threshold value for at least one component of the digital image data for a pixel.
- 25 14. The method of claim 1 wherein the modifying of the digital data to amend data relating to object regions so that the data more closely resembles data of non-object regions includes interpolation of non-defect data.
- 30 15. The method of claim 1 wherein the modifying of the digital data to amend data relating to object regions so that the data more closely resembles data of non-object regions includes linear combination of an interpolation of non-defect data and of original image data.

16. The method of claim 14 wherein the interpolation is linear interpolation.

17. The method of claim 1 wherein the noise is random noise.

5 18. The method of claim 4 wherein the noise is sampled from non-object regions in the vicinity of the object.

19. The method of claim 11 wherein boundaries between object regions and non-object regions are determined by application of a threshold value for at least one
10 component of the digital image data for a pixel.

20. The method of claim 11 wherein the modifying of the digital data to amend data relating to object regions so that the data more closely resembles data of non-object regions includes interpolation of non-defect data.

15 21. The method of claim 11 wherein the modifying of the digital data to amend data relating to object regions so that the data more closely resembles data of non-object regions includes linear combination of an interpolation of non-defect data and of original image data.

20 22. The method of claim 20 wherein the interpolation is linear interpolation.

23. The method of claim 11 wherein the noise is random noise.

25 24. A computer and software in the memory of the computer that can execute the process of claim 1.

25. A computer and software in the memory of the computer that can execute the process of claim 4.

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26. A computer and software in the memory of the computer that can execute the process of claim 11.

5 27. A computer and software in the memory of the computer that can execute the process of claim 19.

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